

## ABSTRACT OF THE DISCLOSURE

An optical filter comprising a first CBG including a first end and a second end, a second CBG of the same structure as the first CBG, including a third end of the same structure as the first end and a fourth end of the same structure as the second end, and a circuit including an input port and an output port. The circuit receives a first optical signal via the input port and brings it to the first end of the first CBG, the circuit receives a second optical signal produced by reflecting the first optical signal from the first CBG and brings the second optical signal to the fourth end of the second CBG, and the circuit receives a third optical signal produced by reflecting the second optical signal from the second CBG and outputs the third optical signal via the output port.